REMARKS/ARGUMENTS

Favorable reconsideration of this application, in light of the present amendments and following discussion, is respectfully requested.

Claims 1 and 3-14 are pending. Claim 2 is canceled without prejudice or disclaimer. Claims 1, 3, 7, 8, 10, and 11 are amended. Support for the amendment to Claim 1 can be found in now-canceled dependent Claim 2, numbered paragraph [0037], and Fig. 7 of the published application, for example. Support for the amendments to Claims 3, 7, 8, 10, and 11 is self-evident. No new matter is added.

In the outstanding Office Action, Claims 1 and 7 were objected to for reciting "lest" instead of "least." Claims 1-6 were rejected under 35 U.S.C. § 112, second paragraph, as indefinite. Claims 1-4 and 6 were rejected under 35 U.S.C. § 102(e) as anticipated by Berger et al. (U.S. Patent No. 6,865,467, herein "Berger"). Claims 1-6 were rejected under 35 U.S.C. § 102(e) as anticipated by Itoh et al. (U.S. Patent No. 7,080,568, herein "Itoh"). Claim 5 was rejected under 35 U.S.C. § 103(a) as obvious over Berger in view of Jackson et al. (U.S. Patent Pub. 2002/0029645, herein "Jackson"). Claims 7-17 were allowed.

Applicants note with appreciation the allowance of Claims 7-17.

Regarding the comment in the outstanding Office Action relating to the reference discussed in the Background of the specification, but not listed in an Information Disclosure Statement (IDS), an IDS is submitted herewith along with a copy of the foreign reference. Applicants respectfully submit that the discussion in the background section serves as a statement of relevancy.

Regarding the objection to Claims 1 and 7 for reciting "lest" instead of "least," Applicants respectfully submit that amended Claims 1 and 7 now recite "least" instead of "lest." Accordingly, Applicants respectfully submit that the objections to Claims 1 and 7 are overcome.

Regarding the rejection of Claims 1-6 as indefinite, Claim 1 is amended to delete the language objected to in the outstanding Office Action as unclear. Accordingly, Applicants respectfully submit that the rejection of Claims 1-6 as indefinite is overcome.

Regarding the rejection of Claims 1-4 and 6 as anticipated by Berger, that rejection is respectfully traversed by the present response.

Applicants believe a brief review of the subject matter relating to Claims 1-6 would be helpful.

In one example of the claimed invention described in paragraph [0037] of the published application where the movable member (46) is intermittently moved a slight amount every time by intermittently driving the electric motor (80) until the lock ball (42) reaches the guiding range of the first shift gate (31). The movable member (46) has an inertia force. When the lock ball (42) reaches the guiding range of the first shift gate (31), the movable member (46) moves in order to automatically guide the lock ball (42) to the deepest portion (55). Once the lock ball (42) is oriented at the deepest portion (55) in the guiding range of the first shift gate (31), the movable member (46) is stopped from moving and can be stabilized at the first shift gate (31).

Fig. 7 illustrates one example of the above-noted operation of the movable member (46) and intermittent driving of the electric motor (80). As described in paragraph [0036] of the published application, when the movable member (46) is positioned at the shift gate reference position PA, the electric motor (80) of the select actuator (8) outputs a driving force $\Delta D1$ so as to move the movable member (46) in the arrow X1 direction. In this case, the movable member (46) is designed to move with a moving amount $\Delta L1$.

The ECU (6) detects the movement of the movable member (46) at a time t1, wherein the driving force outputted from the electric motor (8) is cancelled to be zero. The movable member (46) has an inertia force. Therefore, even when the electric motor (80) does not

output the driving force, the movable member (46) still moves to a certain degree with the inertia force.

In this example, the ECU (6) then detects termination of the movement of the movable member (46) at a time t2, wherein the electric motor (80) outputs a driving force ΔD2. In this case, the movable member (46) moves in the arrow X1 direction with a moving amount ΔL2.

The ECU (6) further detects the movement of the movable member (46) at a time t3, wherein the driving force outputted from the electric motor (80) is cancelled to be zero. In this case, the movable member (46) still moves to a certain degree with the inertia force. The ECU (6) still further detects termination of the movement of the movable member (46) at a time t4, wherein the electric motor (80) outputs a driving force ΔD3.

The ECU (6) further detects the movement of the movable member (46) at a time t5, which is not illustrated but is to be set after the time t4, wherein the driving force outputted from the electric motor (80) is cancelled to be zero. Although the time t5 is not illustrated in Fig. 7, it is clear from the descriptions of times t1 to t4 that the driving force outputted from the electric motor (80) is cancelled to be zero. In this case, the movable member (46) can be moved slightly along the arrow X1 direction with the inertia force, as a result, the movable member (46) reaches the stabilizing range based upon a result of a shift stoke sensor.

Accordingly, amended independent Claim 1 recites, in part:

> at least one shift gate to be engaged with and to be disengaged from the engaging portion, the at least one shift gate defining a vehicle shift stage;
>
> a movable member being movable to engage the at least one shift gate with the engaging portion and to disengage the at [[lest]] least one shift gate from the engaging portion;
>
> an actuator for moving the movable member in a direction for engaging the at least one shift gate with the engaging portion and for disengaging the at least one shift gate from the engaging portion...

wherein the system moves the movable member by intermittently driving the actuator and discontinues driving the actuator immediately before the engaging portion reaches the stabilizing range.

Thus, the system moves the movable member and discontinues driving the actuator moving the movable member immediately before the engaging portion reaches the stabilizing range.

One benefit of the arrangement recited in amended Claim 1 is that it is possible to stabilize the engaging portion at the stabilizing range of the shift gate and to stabilize the position of the movable member along the engagement and disengagement direction. This enables high accuracy positioning a shift gate. More particularly, according to the invention recited in amended independent Claim 1, the actuator or the motor is stopped in response to the movement of the movable member. In other words, until the engaging portion reaches the stabilizing range of the shift gate, the movable member is moved intermittently, which prevents an excessive movement of the movable member along the engagement and disengagement directions. Therefore, the engaging portion is prevented from riding out from the first stabilizing range to the next stabilizing range. Thus, it is possible to enhance accuracy of the position of a shift gate.

In contrast, Berger describes a method of **detecting** the position of a shifter finger in a selector track. Berger describes measuring the current of a motor used to move the shift finger and determining when the motor **stalls** due to abutment of the shift finger against a stopper section of a selector track. Berger performs a checking routine in order to find the location of the shift finger within the selector track.

For example, in Fig. 7, step 438, the selector track is determined to have been found or not. In the negative case of step 438, i.e., if the selector track is not detected, the number of times that the method failed to detect the selector track exceeds a given threshold number or not. In the affirmative case of step 438, the method loops back to step 432, in which the

shifter finger is moved back and forth in the shift direction. Berger requires the motor (actuator) to drive the shifter finger until the motor stalls so that there will be a peak current, which Berger uses to detect the position of the shifter finger. In other words, not only does Berger fail to teach or suggest that its system discontinues driving the actuator moving the movable member immediately before the engaging portion reaches the stabilizing range, but Berger requires that the motor (actuator) be driven until it is forced against a hard stop. Thus, Berger teaches away from the recited features inasmuch as discontinuing movement of the shifter finger in Berger would render Berger unsuitable for its intended purpose of determining a position of the shifter finger by detecting a current spike when the motor stalls in response to the shifter finger hitting a hard stop.

With reference to steps 438 and 432, Berger does not disclose or suggest driving the motor intermittently until the engaging portion (560 in Fig. 16) reaches the selector track and discontinuing driving of the motor immediately before the engaging portion reaches the stabilizing range.

With reference to Fig. 7 of Berger (column 21), when the selector motor starts up, a current surge is detected in the area (410) of the graph. During the movement along the selector track, the current remains essentially constant as seen in the area (412) of the graph. The area (412) represents a flat portion during the movement of the selector track, in which the changes in current are small. At the end stop of the selector track, the current rises remarkably so that the engaging portion (560) rides out from the first groove (detent position) of the selector track to the second groove (detent position) thereof. As described above, in Berger, the detent position is detected by monitoring the motor current. Berger has no description about the movement of the engaging portion (560) over the selector track, which movement results from controlling the driving of the motor.

The invention recited in Claim 1 provides that the engaging portion is stabilized in the stabilizing range and a stabilizing position is determined as a shift gate in a situation where the driving force of the motor is discontinued. Further, the driving of the motor is implemented intermittently.

Berger describes that the profile of the electrical current used by the actuator as a function of time is evaluated to determine a shift finger position. This determination is based on a functional dependency between the time profile of the electrical current and the shift finger position. The actuator devices will exert a force on the shift finger in accordance with a position of the shift finger, while during the actuation, the electrical current is monitored as a function of time. The evaluation of the current as a function of time will indicate when the shifter element is positioned at a hard stop, detents, specific locations within a track, or it will indicate in which track the shift finger is current positioned.

Berger fails to teach or suggest a system that moves the movable member by intermittently driving the actuator and **discontinues driving the actuator immediately before the engaging portion reaches the stabilizing range** because Berger depends on the actuator to produce an electrical current spike when the shift finger hits a hard stop. Berger uses the electrical current spike to discern the position of the shift finger, which is Berger's intended purpose. Thus, to discontinue movement of the shifter element immediately before the engaging portion reaches a stabilizing range would be contrary to Berger's stated purpose. Therefore, not only does Berger fail to teach or suggest all the features of amended independent Claim 1, Berger teaches away from the above-noted feature recited in amended independent Claim 1. Accordingly, Applicants respectfully submit that amended independent Claim 1 and the claims depending therefrom patentably distinguish over Berger for at least the reasons discussed above.

Regarding the rejection of Claims 1-6 as anticipated by Itoh, that rejection is respectfully traversed by the present response.

Itoh was filed in the United States on February 20, 2004. Itoh was published on May 19, 2005. The foreign priority date of the present application is February 25, 2003, which is before the United States filing date of Itoh. An English translation of the foreign priority document, JP 2003-047344, is being submitted herewith along with a statement signed by the translator indicating that the translation is accurate. Accordingly, Applicants respectfully submit that the February 25, 2003, priority date of the present application has been perfected. The foreign priority document supports all of the claims rejected in view of Itoh. Therefore, Itoh is removed as a reference against Claims 1-6 of the present application, and the rejection of Claims 1-6 as anticipated by Itoh is overcome.

Regarding the rejection of Claim 5 as obvious over Berger and Jackson, Applicants respectfully submit that Jackson fails to remedy the deficiencies discussed above regarding Berger. The outstanding Office Action relies on Jackson for the feature of a groove with a V-shaped cross-section.[1] However, Jackson fails to teach or suggest a system that moves the movable member by intermittently driving the actuator and discontinues driving the actuator immediately before the engaging portion reaches the stabilizing range as recited in amended independent Claim 1. Rather, Jackson merely describes an apparatus and method of sensing a position of a detent member. Thus, no proper combination of Berger and Jackson would include all of the features recited in amended independent Claim 1, and the rejection of dependent Claim 5 is overcome.

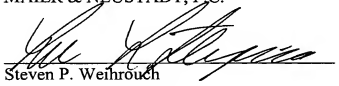
For the foregoing reasons, it is respectfully submitted that this application is now in condition for allowance. A Notice of Allowance for Claims 1 and 3-14 is earnestly solicited.

[1] Outstanding Office Action, page 6.

Should Examiner Pang deem that any further action is necessary to place this application in even better form for allowance, he is encouraged to contact Applicants' undersigned representative at the below-listed telephone number.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.



Steven P. Weihrouch
Attorney of Record
Registration No. 32,829

Lee Stepina
Registration No. 56,837

Customer Number
22850

Tel: (703) 413-3000
Fax: (703) 413 -2220
(OSMMN 03/06)

SPW:LS\la
I:\ATTY\LS\24s\249460US\249460US-AM-DUE-6-30-07.DOC